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Biotechnology Notes

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Biotechnology Notes, a compilation of agency activities, news events, and upcoming meetings, is prepared for members of the U.S. Department of Agriculture's (USDA) Committee on Biotechnology in Agriculture (CBA) by USDA's Office of Agricultural Biotechnology (OAB).

INSIDE USDA

THE NBIAP NETWORK: KEEPING AN EYE OUT FOR SAFETY

The National Biological Impact Assessment Program, or NBIAP (en-bee-ap) for short, is concerned with the biosafety impact of biotechnology on public health and the environment. NBIAP serves as a focal point for sharing biosafety data on field tests with the national research community. NBIAP also facilitates research that predicts, assesses, and monitors the performance of certain organisms in field trials. The program began in 1986 and operates under the aegis of USDA's Cooperative State Research Service (CSRS).

NBIAP recently framed a strategic plan that describes how the program will meet its objectives. The following three areas -- biological monitoring, information exchange, research -- form the basis of that plan.

(1) Biological monitoring techniques -- To encourage the monitoring of field releases at both the research stage and after commercialization. Although much of the knowledge necessary to predict a genetically engineered organism's performance is available from conventional research, procedures and methodologies still need to be laid out.

(2) Information exchange and data management -- To include an electronic bulletin board for the national research community. Also, a series of easy-to-read handbooks for field practices on nightshades, pond-contained fish, soil-borne microbes, and other current topics.

(3) Biosafety research -- To facilitate development of a research program in biosafety to support investigations and to further the safe testing and evaluation of biotech-altered organisms.

Built into the strategic plan are procedures for measuring the program's success, such as use of review panels and preparation of annual reports. To learn more about NBIAP, call Dr. David MacKenzie, NBIAP Director, on (202) 447-5741.

NEWS AND VIEWS AROUND THE COUNTRY

BIOTECH COUNCIL FORMED

The National Agricultural Biotechnology Council is a new organization created to evaluate those policy issues that have an impact on agricultural biotechnology. Charter members include Iowa State University, the Boyce Thompson Institute for Plant Research, Cornell University, and the University of California at Davis. Major funding for the Council is from The Joyce Foundation.

The Council's first annual conference will be held at Iowa State University, Ames, Iowa, May 22-24, and the topic is "Biotechnology and Sustainable Agriculture: Policy Alternatives." For more information, contact Walter R. Fehr, Biotechnology Coordinator, 1212 Agronomy Bldg., Iowa State University, Ames, Iowa 50011; or call (515) 294-6865.

FROM A SEED COMPANY'S PERSPECTIVE . . .

Dr. Nicholas Frey, Director of Technology Acquisition and Development Division for Pioneer Hi-Bred International, gave a presentation in Toronto, Canada, Dec. 6, on how biotechnology is increasing the need for changes in the seed industry. Speaking before the Industrial Biotechnology Association, Dr. Frey said in the last three years seed companies have increasingly shifted their focus away from lab breakthroughs to concerns over legalities, such as patent laws, regulations, and intellectual property rights. This change in priorities, said Dr. Frey, can have an adverse effect on international competitiveness because fewer resources are being applied to research and development.

To offset this shift, Dr. Frey suggested regulatory agencies relax their requirements when risks are shown to be low or non-existent. Second, he encouraged more countries to adopt patent laws that protect seed products. Finally, he recommended revising and broadening the Plant Variety Protection Act to provide greater protection for plant breeders.

CALLING ALL APPLICANTS

The National Institutes of Health's National Library of Medicine, Bethesda, Md., is searching for investigators interested in the computer and information science aspects of molecular biology data management and analysis. Applications are due February 10. For details, call Dr. Roger Dahlen at the Library on (301) 496-4221. Refer to RFA #89-LM-01.

IN CASE YOU WEREN'T THERE

● "Biotechnology Assessment: Risks, Benefits, and Perceptions" was the subject of remarks presented by Dr. John F. Fulkerson, CSRS Principal Scientist, before the

American Phytopathological Society meeting in San Diego, Calif., Nov. 13. Dr. Fulkeron pointed out that the national attention now focused on biotechnology assessment really began in the 1970's with the exciting new advances in recombinant DNA research. He also stressed that post-release impact assessments should be research-based and include long-term effects on populations and changes due to the world's biota.

- CSRS Administrator Dr. John Patrick Jordan was one of the featured speakers at the annual bi-coastal Journalists' Conference held in Washington, D.C., Dec. 1-2 and San Francisco, Calif., Dec. 8-9. Talking on "Foods of the Future", Dr. Jordan said consumer demand for more nutritious, tasty, convenient, and economical food products influences the kinds of projects pursued at food research laboratories around the country. He said USDA's network of highly trained scientists using state-of-the-art technology are helping to meet those demands from the public.

A research team at the Michigan Agricultural Experiment Station, for example, is learning the exact role of Vitamin A in cancer prevention. Another group at Rutgers University uses biotechnology techniques and the lactobacilli organism to improve fermentation processes and produce "natural" flavors that could replace the need for artificial additives now commonly used to enhance the taste of foods. Research at the Cornell University Agricultural Experiment Station suggests an increase in omega-3 polyunsaturated fatty acids and a decrease in the amount of n-6 polyunsaturated fatty acid and total fat may reduce one's chances of developing blood clots. At the Minnesota Agricultural Experiment Station, nutrition research has helped determine the effectiveness of various strategies to deal with lactose intolerance, a serious problem affecting 70 percent of the world's population.

Scientists at other experiment stations are finding new ways of preserving, packaging, handling, and cooking food products, such as the use of "controlled atmospheric" packaging to extend the life of fresh fruits and vegetables.

Dr. Jordan concluded his presentation with examples of future food and plant products including a Spartan Spruce tree, a new variety of poinsettia, hybrid potatoes, high protein snack chips, and a biodegradable trash bag made from corn starch.

- Members of USDA's Agricultural Biotechnology Research Advisory Committee (ABRAC) working group met on Dec. 2 to discuss research guidelines. The guidelines would be based on the properties of the organism and the modification could be applied to any experiment with any organism. A table would assign the modified organism to a category that sets the recommended level of containment. Although one category of experiments would be exempt from confinement, others would need advance approval from the Institutional Biosafety Committee or from the ABRAC.

- The Office of the Assistant Secretary of Agriculture for Science and Education and the Agricultural Research Institute sponsored a 3-day workshop, Dec. 12-14, to evaluate current research activities in plant genome mapping and sequencing. Attendees discussed the criteria for selecting crop and forest species for research, features of a national information network for plant genome research, and proposed activities for starting such projects. A report of the meeting including specific recommendations is now being prepared and will be forwarded for review to the Assistant Secretary of Agriculture for Science and Education.

● "Transgenic Technology in Medicine and Agriculture" was the topic of a conference held Dec. 12-15 at the National Institutes of Health, Bethesda, Md. Guest speakers discussed methods of gene transfer using DNA microinjection, blastocoele injection of transgenic embryonic stem cells, and insertional mutagenesis. The conference covered the use of transgenics in swine, sheep, cattle, chickens, fish, and rats, as well as discussions on gene expression and animal patenting.

NEW PUBLICATIONS

Strategic Alliances in Biotechnology, a reference on selected company liaisons and changes in ownership in the biotech industry. Published by Arthur D. Little Decision Resources. May 1988. \$500. To order or receive more information, call Jean Carbone at (617) 270-1222.

Biotechnology in Agriculture, a detailed analysis and report of opportunities in the marketplace; patent issues; regulatory structures in the United States, Japan, and Europe; projected 1995 sales volume of ag biotech products for animal health, feed, soil treatment, seed, and crop protection; etc. Published by Arthur D. Little Decision Resources. November 1988. \$1800. To order or receive more information, call Jean Carbone at (617) 270-1222.

Two new fact sheets are now available, free of charge, from the American Biotechnology Association. "An Overview of Biotechnology" and "Genetic Engineering — 21st Century Technology or 17th Century Witchcraft?" are part of a series intended to explain biotechnology in simple terms for the general reader. To order, send a stamped, self-addressed, business-size envelope to: Fact Sheets, c/o American Biotechnology Association, P.O. Box 8258, Princeton, N.J. 08543-8258.

"Biotechnology Information Initiatives of the National Library of Medicine" is the subject of an in-depth article by Dr. J. J. Ferguson, appearing in Society for Industrial Microbiology, vol. 38, May-June 1988, pp. 7-9.

"The Web of Life", a public television show on genetic engineering, will be broadcast Jan. 25. Check local listings in your area for details.

Federal Lab Technology Transfer: Issues and Policies. Gordon R. Bopp, Editor. New York. 1988, Praeger Publishers. ISBN-0-275-92956-6. \$39.95.

"New Dairy Technologies" is a series of 11 fact sheets now available from the National Dairy Herd Improvement Association. They were prepared by the National Dairy Technologies Education Committee with representatives from USDA's Extension Service and Agricultural Research Service, State research leaders, dairy industry organizations, universities, and companies producing the products. The first set of fact sheets covers bovine somatotropin. Orders of up to 50 are \$3.00 per set; 50 or more orders cost \$2.00 per set. To order, call (614) 890-3630.

"AGRICOLA" (AGRICultural OnLine Access) is a handy new brochure that describes this bibliographic database and how to access it. To receive the brochure, call USDA's National Agricultural Library at (301) 344-3875.

UPCOMING MEETINGS

Jan. 5-6: Meeting of USDA's ABRAC. Items on the agenda include developing guidelines for agricultural research, a field handbook, and issues that address biological confinement of organisms used in research. The meeting is open to the public and will take place at USDA, 14th and Independence Ave., S.W., Rm. 104-A, Administration Bldg., Washington, D.C. 20250. The meeting times are 9 a.m. to about 5 p.m. on Jan. 5 and 9 a.m. to about 3 p.m. on Jan. 6. For more information, contact Dr. Alvin Young, ABRAC Executive Secretary, on (202) 447-9165.

Jan. 17-19: 5th International Symposium on Separation Science and Biotechnology. Fort Lauderdale, Fla. Contact Barr Enterprises, P.O. Box 279, Walkersville, Md. 21793.

Jan. 17-19: International Symposium on Biotechnology in Agriculture. Harare, Zimbabwe. Contact: Dr. Charles Gore, Executive Director for Environment and Development Activities, SADCC, P.O. Box 3492, Harare, Zimbabwe; or call 26-34-729024.

Jan. 19: "An Update on Wall Street's Thinking About the Biotechnology Industry." Stelios Papadopoulos, PaineWebber, Inc., Gaithersburg, Md. This is a breakfast meeting sponsored by Montgomery County, Maryland's High Technology Council. Call the Council at (301) 762-6325 for details.

Jan. 20-27: New Directions in Biological Control. Frisco, CO. A UCLA molecular biology symposium. The program will explore the capability of modern biotechnology to enhance the effectiveness of biological systems. For more information, call (213) 206-6292 or write to UCLA Symposia, 103 Molecular Biology Institute, Los Angeles, Calif. 90024-1378.

Jan. 23: "New Developments in Biotechnology". Held at University of Florida College of Law in Gainesville, Fla. Contact: Monica Broderick-Cantwell at (904) 392-2237.

Jan. 28-Feb. 3: Transgenic Models in Medicine and Agriculture. Taos, New Mexico. For more information, see details of Jan. 20-27 meeting given above.

Feb. 6-10: The Miami Biotechnology Winter Symposium. Miami Knights International Center, Miami, Fla. Contact The Miami Biotechnology Winter Symposium, P.O. Box 016129, Miami, Fla; telephone 1-305-324-5665.

Feb. 13-15: A conference on "The Interactions of UV-B and Crop Plants". Sponsored by USDA's Assistant Secretary for Science and Education. To be held at the University of Florida in Gainesville, Fla. Contact: Dr. R. H. Biggs at (904) 392-6888.

Biotechnology Notes is written and edited by Marti Asner, a public affairs specialist on assignment to OAB. Suggestions for items to include in future issues are always appreciated and may be sent to: USDA/OAB, 14th and Independence Ave., S.W., Room 321-A, Administration Bldg., Washington, D.C. 20250; telephone (202) 447-9165.

